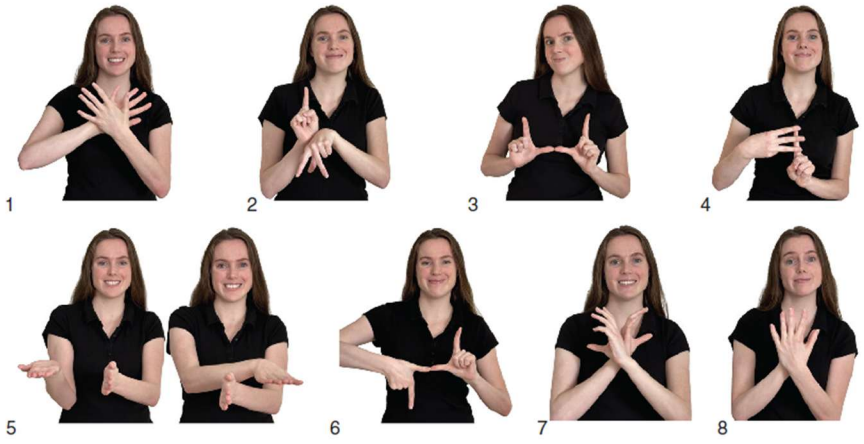
WorldLinks Organic Chemistry as a Second Language

At this point in the course, you may be starting to appreciate the title of the popular workbook, "Organic Chemistry as a Second Language." The volume of vocabulary in Chapter 5 can be overwhelming—chiral, achiral, enantiomer, diastereomer, meso, optically active, levorotatory, dextrorotatory, *R*/*S*, *cis*/*trans*—and there is still more to come! It is very much like a foreign language. At the same time, it is critical that you learn the language because that is how we communicate. We will be using this vocabulary again and again in future chapters and throughout the entire year of the organic chemistry course. To become fluent in a foreign language, we must go beyond simply reading the written words and learning their definitions. We must *hear* the language and *speak* the language and *use* our new vocabulary! To become fluent in organic chemistry, we must do the same. Try making flash cards for every new word you encounter, and say the word and the definition out loud as you study. Working with study groups is another great way to get practice talking out loud. Study groups also provide an opportunity for listening to discussions centered around chemistry. Using a variety of modalities—reading, writing, speaking and listening—leads to deeper learning, because we are engaging different parts of the brain!

Perhaps organic chemistry is the *third* or even the *fourth* language you are learning. Such is the case for deaf students who read English and use American Sign Language (ASL) to communicate. ASL interpreters for science classes often have a hard time keeping up when they have to spell out unfamiliar words such as s-t-e-r-e-o-i-s-o-m-e-r. Spelling out words also disrupts the flow of the lecture for the learner. There is a growing need for signs that represent scientific terms, but the development process is a slow one. New signs must follow the linguistic rules of ASL, and they need to consider the context in which the term is used. The word "molecule" means different things to a biologist and an organic chemist and a physicist. Students and interpreters at the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology (RIT) are working with deaf content experts to develop new signs for advanced terminology in a variety of disciplines. They created a repository (ASLCORE.org) where the signs are organized by discipline.

A new sign is more likely to be adopted by the deaf community if it accurately reflects the concept of the term. Can you translate any of the signs below? The concepts represented are: steric hindrance, *cis*, *trans*, tetrahedral, eclipsed, staggered, Fischer projection, and enantiomer. Discuss these concepts and photos with your study group and visit the Student Solutions Manual for the answer key.



Former organic chemistry student and future Physician Assistant Christina Gloady is proficient in both the language of chemistry and American Sign Language (ASL).